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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte EDWARD M. GOLDSMITH and CHRISTOPHER K. DELAP

Appeal 2008-3526
Application 10/759,525
Technology Center 3700

Decided: January 23, 2009

Before ERIC GRIMES, RICHARD M. LEBOVITZ, and STEPHEN
WALSH, *Administrative Patent Judges*.

WALSH, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a hybrid hockey stick blade. The Examiner rejected the claims for obviousness. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

The invention relates to hockey stick blades. (Spec. 4.) Composite blades are said to have advantages over wood blades. (*Id.*) Hybrid hockey stick blades are described. (Spec. 4-6.)

Claims 30-37, 40, 42-49 and 108-110, which are all the pending claims, are on appeal. The claims have not been argued separately and therefore stand or fall together. 37 C.F.R. § 41.37(c)(1)(vii). Claim 30 is representative and reads as follows:

30. A hybrid hockey stick blade adapted to being removably coupled to a hockey stick shaft comprising:

a composite paddle portion comprising:

- i. an elongate member extending from a tip section to a heel section and having a front face and a back face;
- ii. the heel section comprising front-side and back-side facing surfaces that are recessed relative to adjacent portions of the front and back faces;
- iii. the elongate member further comprising an inner foam core and one or more plies disposed within a hardened resin matrix material overlaying the inner foam core, wherein the one or more plies comprise fibers aligned in one or more defined directions; and

a wooden hosel portion comprising:

- i. an adapter member constituted at least in part of wood and extending longitudinally from a first end section to a second end section;
- ii. the first end section includes a slot wherein the recessed surfaces of the heel section are received and permanently coupled thereto; and
- iii. the second end section being adapted for receipt within a tubular portion of a hockey stick shaft,

wherein a portion of said fibers being interposed between one or more of the recessed heel section surfaces and an overlying inner surface defining the slot in the first end-section of the hosel portion.

The claims were rejected for obviousness as follows:

Claims 30-37, 40, 42-49 and 108-110 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Christian¹ in view of Tiitola.²

OBVIOUSNESS

The Examiner concluded the claims would have been obvious over the combined teachings of the Christian and Tiitola patents. The Examiner's position is that Christian disclosed the claimed blade except for the inner foam core. (Ans. 3.) The Examiner found that Tiitola disclosed a foam core blade or "paddle" of better quality than wood blades such as Christian's. *Id.* The Examiner concluded it would have been obvious to improve the quality of Christian's blade with Tiitola's foam core blade. *Id.* The Examiner concluded that joining Tiitola's fiber composite paddle to Christian's hosel³ in the manner described by Christian would cause the fibers of Tiitola's paddle to be interposed between the recessed heel section surfaces and the hosel slot. (*Id.*; Ans. 7.) The Examiner found Appellants' evidence of commercial success did not establish a nexus between the features of the claims and the items sold. (Ans. 8-9.) According to the Examiner, paragraphs 34-39 of the declaration offering evidence on commercial success do not include a number of the features of claim 30, and Appellants

¹ U.S. Patent No. 6,039,661, issued to Christian et al., Mar. 21, 2000.

² U.S. Patent No. 5,407,195, issued to Tiitola et al., Apr. 18, 1995.

³ A "hosel" is the upward extension of the hockey bade from the heel which acts as blade connection member (Spec. 2: 17-19).

did not show that the success of the products was attributable to the particular features claimed. *Id.*

Appellants contend that the Examiner erroneously assumed the claim limitations existed in the prior art. (App. Br. 12.) Appellants argue that these features are not taught or suggested: (i) a composite blade with a recessed heel, (ii) fibers interposed between the recessed heel and the wooden hosel, (iii) a wooden hosel permanently coupled to a composite paddle and adapted for receipt within a tubular hockey stick shaft. (App. Br. 13.) Appellants summarize as follows: “the rejection simply fails to identify the ‘known elements’ of the prior art, no doubt because the blades of Tiitola et al. and Christian et al. do not contain the claimed features.” (App. Br. 14.)

Appellants argue that the Examiner’s explanation for combining the references is “conclusory and flawed” (Reply Br. 4-6), and that the Tiitola reference teaches away from a recessed heel blade configuration. (Reply Br. 6-8.) According to Appellants, there was “no explicit reason to combine the elements in the way the new invention does” (Reply Br. 8), and the Examiner proposes to remove the very structural elements in Tiitola that provide structural integrity (Reply Br. 9.) According to Appellants, the evidence regarding commercial success establishes that the combination is non-obvious. (App. Br. 17.)

The issues with respect to this rejection are:

- did the Christian and Tiitola references teach or suggest all the elements of the claims;

- did the Examiner provide a sound reason explaining why one of ordinary skill in the art would have combined the teachings of Christian and Tiitola;
- did the Tiitola reference teach away from the claimed invention;
- did Appellants show a nexus between the novel features of the claims and their sales; and
- did Appellants' sales evidence establish nonobviousness?

FINDINGS OF FACT

1. Christian disclosed a "replacement blade for a hockey stick handle with improved reinforcement in the area between the hozel [sic, hosel] or connection end and between the hozel [sic, hosel] and the bottom edge of the blade." (Col. 2, ll. 43-48.)
2. Christian's FIG. 3 showed the parts of a replacement hockey stick blade comprising "a wooden bladestock **24**, a wooden block **25** and a wooden shaftstock **26**." (Col. 5, ll. 35-39.)
3. Christian's "block **25** and the shaftstock **26** are formed from conventional handle stock, are glued together along adjacent edges and are provided with a generally tapered slot or mortise **28** as shown [in Fig. 3]." (Col. 5, ll. 39-42.)
4. Christian's "bladestock **24** is a generally flat, planar piece of wood which is provided with a tongue area or tenon **29** of reduced thickness for insertion into the slot **28** where it is retained by an appropriate adhesive." (Col. 5, ll. 42-46.)

5. Christian explained that “[t]he assembly and gluing of the pieces **24**, **25** and **26** result in the rough blade configuration as illustrated in FIG. 4.” (Col. 5, ll. 46-48.)
6. After additional steps, Christian’s replacement blade is smooth sanded or finished sanded “to provide the final finished shape.” (Col. 6, ll. 50-57.)
7. Following shape sanding, Christian’s replacement blade “can, if desired, be provided with further fabric reinforcement over the exterior surface of the blade **15** and a portion of the shaft **16**,” with “a tubular braid such as that shown by reference character **41** of FIG. 8 or sheets, or wrappings of fiberglass or other reinforcement material,” and “the blade is again smooth sanded.” (Col. 6, ll. 57-67.)
8. Christian disclosed “a composite (fiber reinforced plastic and wood) blade in combination with a wood hosel (25, 26) and a tubular shaft.” (Ans. 7.)
9. Christian does not disclose a paddle with an inner foam core.
10. Tiitola disclosed a composite blade construction for a hockey stick. (Col. 1, ll. 5-13.)
11. Tiitola’s blade element is designed to be of better quality than known blades, and to be “strong, durable, light-weight and of acceptable stiffness.” (Col. 1, ll. 30-68.)
12. Tiitola’s composite blade element may comprise opposed face members of fiber reinforced plastic material, and the face members may be connected to each other with bridge members also of fiber

- reinforced plastic material, the bridge members being part of a core cavity member. (Col. 2, ll. 1-21.)
13. Tiitola's core cavity may be filled with foam, as shown in FIG. 5-8. (Col. 10, ll. 19-23.)
 14. Tiitola disclosed the composite blade in combination with a wood handle, see **3** in FIG. 1. (Col. 11, ll. 43-56.)
 15. Tiitola instructed that "the heel end of the final intermediate structure [paddle] may be configured as shown in FIG. 1 so as to matingly contact with the lower end **3** of the handle section **1**." (*Id.*)
 16. Tiitola further instructed that if the heel end of the paddle was configured to matingly contact the lower end of the handle section, "the excess reinforcing plastic layers **28** and **29** in this region of the intermediate structure will be extended to overlap the handle portion **3**." (*Id.*; see Fig. 8 showing layers 28 and 29).
 17. The "heel end" of Tiitola's paddle corresponds to Christian's tenon **29**, and Tiitola's "lower end **3**" corresponds to the lower end of Christian's shaftstock **26**.

PRINCIPLES OF LAW

Section 103 of Title 35 prohibits a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

Obviousness is a question of law based on fact findings including: the scope and content of the prior art; differences between the prior art and the claims at issue; the level of skill in the art; and objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). The obviousness or nonobviousness of the subject matter is determined against that factual background. *Id.*; *In re Kahn*, 441 F.3d 977, 985 (Fed. Cir. 2006). The determination of obviousness is made with respect to the subject matter as a whole, not separate pieces of the claim. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S.Ct. 1727, 1734 (2007). A claim that involves a combination of familiar elements according to known methods that do no more than yield predictable results may have been obvious. *KSR*, 550 U.S. 398, ___, 127 S.Ct. at 1739.

What the prior art teaches, whether it teaches away from the invention, and whether it motivates a combination of teachings from different references are questions of fact. *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004). When references are combined, “the question is whether there is something in the prior art as a whole to suggest the *desirability*, and thus the obviousness, of making the combination, not whether there is something in the prior art as a whole to suggest that the combination is the *most desirable* combination available.” *Id.* (internal quotation omitted). “A suggestion or motivation to modify prior art teachings may appear in the content of the public prior art, in the nature of the problem addressed by the invention, or even in the knowledge of one of ordinary skill in the art.” *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332, 1338 (Fed. Cir. 2005). “A reference may be said to teach away when a person of

ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). “[M]ere disclosure of alternative designs does not teach away.” *Fulton*, 391 F.3d at 1201 (refusing to conclude that prior art disclosure taught away from the claimed invention where the disclosure did not “criticize, discredit, or otherwise discourage the solution claimed”).

Commercial success “is relevant in the obviousness context only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention—as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996).

ANALYSIS

The Examiner combined the teachings of two prior art patents, both of which disclosed replacement composite hockey stick blades. Whether the combination is a modification of one blade or the other is immaterial. The Examiner concluded that a person of ordinary skill in the art at the time of the invention would have found it obvious to build a replacement composite hockey stick blade incorporating Tiitola’s foam-core paddle into a blade with Christian’s hosel in order to improve blade quality. (Ans. 3.)

Appellants contend that the prior art does not contain all the elements of the claims and that these features are not taught or suggested in the prior art: (i) a composite blade with a recessed heel, (ii) fibers interposed between

the recessed heel and the wooden hosel, (iii) a wooden hosel permanently coupled to a composite paddle and adapted for receipt within a tubular hockey stick shaft. (App. Br. 13.) Appellants also argue the rejection fails to identify the “known elements” of the prior art blades, “no doubt because the blades of Tiitola et al. and Christian et al. do not contain the claimed features.” (App. Br. 14.)

The Examiner’s citations identify the elements of the prior art blades and associate them with the claim language. (Ans. 3.) As to the three features Appellants list, the Examiner found that when a blade such as Tiitola’s is joined to the hosel in the manner disclosed by Christian, the fibers of the blade necessarily have to be between the recessed heel section and the slot. *Id.* That is, the Tiitola composite paddle would be formed with a recessed heel in order to fit it into the slot in Christian’s wooden hosel. *Id.* As both Christian and Tiitola disclose the blade permanently coupled and adapted for receipt within a tubular stick, the combination would be no different. The three elements listed are accounted for by the Examiner’s explanation.

Appellants dispute the soundness of the combination, finding the Examiner’s explanation “conclusory and flawed.” (Reply Br. 4-6.) According to Appellants, Tiitola’s foam core has very little strength, and the primary strength in Christian’s blade is derived from the wood construction. (App. Br. 15.) There is no evidence in the record establishing as a fact that Tiitola’s foam core has very little strength, and Appellants themselves quote Tiitola as teaching that “the blade for a hockey stick must be extremely strong.” (App. Br. 8.) The Examiner’s finding that Tiitola discloses a

paddle “designed to be of better quality than known blades such as Christian’s” (Ans. 3), is supported by Tiitola’s disclosure of improved quality. (FF11.)

Appellants also argue that Tiitola teaches away from a recessed-heel blade configuration. (Reply Br. 6-8.) The Goldsmith Declaration opines that there was no motivation to employ tongue and groove joint construction at a heel region, and it would introduce lack of uniformity in the hitting surfaces. (App. Br. 16.) Appellants cite “the hockey stick embodiment shown in [Tiitola] FIG. 1,” as showing the handle being received by the “intermediate structure,” which they say overlaps, or surrounds, the handle structure. (Reply Br. 6-7.) This is contrasted with the claimed invention, in which the hosel is configured to receive and overlap the blade. *Id.*

Tiitola’s description of FIG. 1 does not support Appellants’ interpretation. The text reads:

With respect to the hockey stick embodiment as shown in FIG. 1, the heel end of the final intermediate structure may be configured as shown in FIG. 1 so as to matingly contact with the lower end 3 of the handle section 1. ***Thus the excess reinforcing plastic layers 28 and 29 in this region of the intermediate structure will be extended to overlap the handle portion 3***

Col. 11, ll. 43-56 (emphasis added). Tiitola’s “matingly contact” could be interpreted at least two ways: (i) the intermediate structure or paddle is “matingly” inserted into the lower end of the handle (the Examiner’s reading), or (ii) the lower end of the handle is “matingly” inserted into the intermediate structure or paddle (Appellants’ reading). If Tiitola intended option (ii), so that the paddle overlapped the lower end of the handle, there would have been no “excess reinforcing plastic layers” (FF16) and no need

for Tiitola to give the instruction to extend the plastic reinforcing layers to overlap the handle. Instead, option (i) is more consistent with the text, i.e., the paddle is to be inserted into the handle. Any lack of uniformity in the surface is dealt with in part by plastic layers “extended to overlap the handle portion.” As the Examiner found (Ans. 5-6.), the paddle necessarily would have a recessed heel for that insertion as taught by Christian. (FF4.) One of skill in the art would have understood Tiitola’s instruction using FIG. 1 “to matingly contact [the paddle or intermediate structure] with the lower end 3 of the handle section” to have been equivalently illustrated by Christian’s FIG. 3, where Christian’s paddle tenon **29** matingly contacts Christian’s hosel slot **28**. (FF17.) Retaining fibers on the recessed area of the Tiitola’s paddle, corresponding to Christian’s tenon **29**, would have been recognized as necessary to the strength of the blade, and to have done otherwise would have reduced the structural integrity of the blade. (Ans. 5-6.) *See KSR*, 127 S. Ct. at 1742 (“in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like the pieces of a puzzle”).

Appellants’ argument about fibers being placed outside the hosel and causing a roughened surface is not persuasive. (App. Br. 16; Reply Br. 5-7.) Christian taught the importance of a smooth blade. (FF7; FF6.) Additionally, we find Tiitola’s FIG. 1 and Christian’s FIG. 8 to be very similar. Christian’s instructions on smooth finishing would have been followed by a person of ordinary skill in the art the time who wished to use Christian’s hosel structure in a replacement blade, whether the paddle portion was wood or Tiitola’s foam core and fiber material. There is no evidence that artisans of the time would have ignored Christian’s

instructions. Appellants' argument is not based on evidence. Instead the argument seems to presume, contrary to the prior art instructions, that the ordinary artisan at the time lacked an awareness that a smooth blade was desired, or that the ordinary artisan lacked the skill to combine Tiitola's paddle with Christian's hosel so as to make a smooth blade. Our reviewing court rejected a similar argument because the argument failed to acknowledge ordinary skill in the art. *In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (“[Appellants] are assuming that one of ordinary *skill* would not appreciate that Esher's hollow member 14 could be removed if it is not wanted, as insulation or otherwise, and that it *would* not be removed by a skilled worker who wished to allow heat recovery of the conduit in which it was placed. This argument presumes stupidity rather than skill.”) (Emphasis in original.). “[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR*, 550 U.S. 398, ___, 127 S. Ct. at 1740. We agree with the Examiner’s reasoning and find that Tiitola does not “teach away” from the combination. *See Gurley*, 27 F.3d at 553.

According to Appellants, the evidence regarding commercial success establishes the non-obviousness of the combination. (App. Br. 17-21.) The objective evidence of sales did not persuade the Examiner to conclude the invention would have been nonobvious because, according to the Examiner, Appellants did not establish a nexus between what was sold and the limitations of claim 30. (Ans. 8-10). Even though commercial embodiments of an invention might have enjoyed commercial success,

Appellant must link that commercial success to the features of its invention that were not disclosed in the prior art. *See J.T. Eaton & Co. v. Atlantic Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997) (“asserted commercial success of the product must be due to the merits of the claimed invention beyond what was readily available in the prior art”); *Asyst Technologies, Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008).

Specifically, the Examiner found that the Goldsmith Declaration gives “a general description of the blade/shaft connection in paragraph 39 which does not even include a number of the argued features of the device of claim 30, such as the limitation of the fiber layers between the recessed portion and the slot.” (Ans. 9-10). We agree. A major issue of nonobviousness between the Examiner and Appellants is the limitation “fibers being interposed between one or more of the recessed heel section surfaces and an overlying inner surface defining the slot in the first end-section of the hosel portion.” The Declaration does not provide “hard evidence” that the blades sold had this limitation and does not provide “proof that the sales were a direct result of the unique characteristics of the claimed invention.” *Huang*, 100 F.3d at 140.

Appellants argue that “the direct evidence of applicant’s increasing sales . . . in an otherwise level or declining market for directly competing replacement blades, establishes the necessary nexus.” (App. Br. 20.) That is not what “nexus” means. It is well-settled that a showing of commercial success must establish that the success of the products was attributable to the subject matter that the proponent contends was nonobvious. *In re Graselli*, 713 F.2d 731, 743 (Fed. Cir. 1983); *Asyst Techs., Inc. v. Emtrak, Inc.*,

544 F.3d 1310, 1316 (Fed. Cir. 2008); *In re DBC*, 545 F.3d 1373, 1384 (Fed. Cir. 2008). The nexus to be established by “hard evidence” is that the sales are due to the nonobvious subject matter; the nexus is not inferred from sales, which are not given weight unless the appropriate nexus is first established. *Huang*, 100 F.3d at 140.

Finally, Appellants argue the rejection is “in violation of the policy of the Patent Office.” (App. Br. 14.) Specifically, Appellants argue that the Examiner violated the Office policy requiring Examiners to identify a reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. (App. Br. 14-15.) We find that the Examiner provided evidence-based reasons for combining the teachings of the prior art. We find that substantial evidence supports the Examiner’s fact findings concerning (i) the scope and content of the prior art, (ii) the suggestions found in both references for modifying replacement hockey stick blades, and (iii) the proffered evidence of commercial success. We conclude the Examiner gave appropriate weight to all the facts in reaching the ultimate determination of obviousness.

CONCLUSIONS OF LAW

- the Christian and Tiitola references teach or suggest all the elements of the claims;
- one of ordinary skill in the art would have combined teachings of Christian and Tiitola because the combination would have combined Christian’s strength with Tiitola’s improved feel;
- the Tiitola reference did not teach away from the claimed invention;

- Appellants did not establish a nexus between the limitations of the claims and sales; and
- Appellants' sales evidence does not outweigh the evidence weighing toward obviousness.

SUMMARY

We affirm the rejection of claims 30-37, 40, 42-49 and 108-110 under 35 U.S.C. § 103(a) as being unpatentable over Christian in view of Tiitola.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a.)

AFFIRMED

Ssc:

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